

IN THE CLAIMS:

- 1 1. (Withdrawn) A fusion transcript consisting of a homologue cross-over between two different
2 genes with more than 80% sequence homology in certain regions, in particular regions of cross-
3 over.
- 1 2. (Withdrawn) A fusion transcript according to claim 1, wherein the two genes are the genes of
2 SCCA1 and SCCA2.
- 1 3. (Withdrawn) A full length fusion transcript protein between SCCA1 and SCCA2 having
2 switched reactive site loops compared to basic promoter.
- 1 4. (Withdrawn) A substantially full length fusion transcript protein between SCCA1 and
2 SCCA2 having switched reactive site loops compared to basic promoter.
- 1 5. (Withdrawn) A fusion protein according to claim 4 coded by one or more of exons 2 - 7 of
2 SCCA1 gene fused to exon 8 of SCCA2 gene.
- 1 6. (Withdrawn) A fusion protein according to claim 1 coded by exon 2 - 7 of SCCA1 gene
2 fused to exon 8 of SCCA2 gene.
- 1 7. (Withdrawn) A fusion protein according to claim 4 coded by one or more of exons 2 - 7 of
2 SCCA2 gene fused to exon 8 of SCCA1 gene.
- 1 8. (Withdrawn) A fusion protein according to claim 1 coded by exon 2 - 7 of SCCA2 gene
2 fused to exon 8 of SCCA1 gene.
- 1 9. (Withdrawn) A fusion protein according to claim 5, wherein the protein sequence is
2 MNSLSEANTK FMFDLFQQFR KSKENNIFYS PISITSALGM VLLGAKDNTA
3 QQIKKVLHFD QVTENTTGKA ATYHVDRSGN VHHQFQKLLTE FNKSTDAYE
4 LKIANKLFG E KTYLFLQEYL DAIKKFYQTS VESVDFANAP EESRKKINSW
5 VESQTNEKIK NLIPEGNIGS NTTLVLVNAI YFKGQWEKKF NKEDTKEEKF

6	WPNKNTYKSI	QMMRQYTSFH	FASLEDVQAK	VLEIPYKGKD	LSMIVLLPNE
7	IDGLQKLEEK	LTAEKLMEW	SLQNMRETCV	DLHLPRFKME	ESYDLKDTLR
8	TMGMVNIFNG	DADLSGMTWS	HGLSVSKVLH	KAFVEVTEEG	VEAAAATAVV
9	VVELSSPSTN	EEFCCNHPFL	FFIRQNKTNS	ILFYGRFSSP	

1 10. (Withdrawn) A DNA sequence sequence coding for a fusion SCCA1/SCCA2 protein.

1 11. (Withdrawn) A DNA sequence comprising the nucleotide sequence of exon 2 – 7 of SCCA1
2 fused to the nucleotide sequence of exon 8 of SCCA2.

1 12. (Withdrawn) A DNA sequence according to claim 11, wherein the nucleotide sequence is

2	ATGAATTCAC	TCAGTGAAGC	CAACACCAAG	TTCATGTTCG	ACCTGTTCCA
3	ACAGTTCAGA	AAATCAAAAG	AGAACAACAT	CTTCTATTCC	CCTATCAGCA
4	TCACATCAGC	ATTAGGGATG	GTCCTCTTAG	GAGCCAAAGA	CAACACTGCA
5	CAACAGATTA	AGAAGGTTCT	TCACTTTGAT	CAAGTCACAG	AGAACACCAC
6	AGGAAAAGCT	GCAACATATC	ATGTTGATAG	GTCAGGAAAT	GTTTCATCACC
7	AGTTTCAAAA	GCTTCTGACT	GAATTCAACA	AATCCACTGA	TGCATATGAG
8	CTGAAGATCG	CCAACAAGCT	CTTCGGAGAA	AAAACGTATC	TATTTTTTACA
9	GGAATATTTA	GATGCCATCA	AGAAATTTTA	CCAGACCAGT	GTGGAATCTG
10	TTGATTTTGC	AAATGCTCCA	GAAGAAAGTC	GAAAGAAGAT	TAACTCCTGG
11	GTGGAAAGTC	AAACGAATGA	AAAAATTAAA	AACCTAATTC	CTGAAGGTAA
12	TATTGGCAGC	AATACCACAT	TGGTTCTTGT	GAACGCAATC	TATTTCAAAG
13	GGCAGTGGGA	GAAGAAATTT	AATAAAGAAG	ATACTAAAGA	GGAAAAATTT
14	TGGCCAAACA	AGAATACATA	CAAGTCCATA	CAGATGATGA	GGCAATACAC
15	ATCTTTTCAT	TTTGCCTCGC	TGGAGGATGT	ACAGGCCAAG	GTCCTGGAAA
16	TACCATACAA	AGGCAAAGAT	CTAAGCATGA	TTGTGTTGCT	GCCAAATGAA
17	ATCGATGGTC	TCCAGAAG CT	TGAAGAGAAA	CTCACTGCTG	AGAAATTGAT
18	GGAATGGACA	AGTTTGCAGA	ATATGAGAGA	GACATGTGTC	GATTTACACT
19	TACCTCGGTT	CAAAATGGAA	GAGAGCTATG	ACCTCAAGGA	CACGTTGAGA
20	ACCATGGGAA	TGGTGAATAT	CTTCAATGGG	GATGCAGACC	TCTCAGGCAT
21	GACCTGGAGC	CACGGTCTCT	CAGTATCTAA	AGTCCTACAC	AAGGCCTTTG

22 TGGAGGTCAC TGAGGAGGGA GTGGAAGCTG CAGCTGCCAC CGCTGTAGTA
 23 GTAGTCGAAT TATCATCTCC TTCAACTAAT GAAGAGTTCT GTTGTAATCA
 24 CCCTTTCCTA TTCTTCATAA GGCAAATAA GACCAACAGC ATCCTCTTCT
 25 ATGGCAGATT CTCATCCCCA

1 13. (Withdrawn) A plasmid comprising the nucleotide sequence corresponding to one or more
 2 of exons 2 - 7 of SCCA1 gene fused to exon 8 of SCCA2 gene.

1 14. (Withdrawn) A plasmid comprising the nucleotide sequence corresponding to exons 2 - 7 of
 2 SCCA1 fused to the nucleotide sequence of exon 8 of SCCA2.

1 15. (Withdrawn) A plasmid comprising the nucleotide sequence corresponding to one or more
 2 of exons 2 – 7 of SCCA2 gene fused to exon 8 of SCCAI gene.

1 16. (Withdrawn) A plasmid comprising the nucleotide sequence corresponding to exons 2 - 7 of
 2 SCCA2r gene fused to exon 8 of SCCA1 gene.

1 17. (Withdrawn) A plasmid according to claim 13, comprising the nucleotide sequence: of
 2 claim 12 ATGAATTCAC TCAGTGAAGC CAACACCAAG TTCATGTTTCG ACCTGTTCCA
 3 ACAGTTCAGA AAATCAAAAG AGAACAACAT CTTCTATTCC CCTATCAGCA
 4 TCACATCAGC ATTAGGGATG GTCCTCTTAG GAGCCAAAGA CAACACTGCA
 5 CAACAGATTA AGAAGGTTCT TCACTTTGAT CAAGTCACAG AGAACACCAC
 6 AGGAAAAGCT GCAACATATC ATGTTGATAG GTCAGGAAAT GTTCATCACC
 7 AGTTTCAAAA GCTTCTGACT GAATTCAACA AATCCACTGA TGCATATGAG
 8 CTGAAGATCG CCAACAAGCT CTTGCGAGAA AAAACGTATC TATTTTTACA
 9 GGAATATTTA GATGCCATCA AGAAATTTTA CCAGACCAGT GTGGAATCTG
 10 TTGATTTTGC AAATGCTCCA GAAGAAAGTC GAAAGAAGAT TAACTCCTGG
 11 GTGGAAAGTC AAACGAATGA AAAAATTAAA AACCTAATTC CTGAAGGTAA
 12 TATTGGCAGC AATACCACAT TGGTTCTTGT GAACGCAATC TATTTCAAAG
 13 GGCAGTGGGA GAAGAAATTT AATAAAGAAG ATACTAAAGA GGAAAAATTT
 14 TGGCCAAACA AGAATACATA CAAGTCCATA CAGATGATGA GGCAATACAC

15 ATCTTTTCAT TTTGCCTCGC TGGAGGATGT ACAGGCCAAG GTCCTGGAAA
 16 TACCATACAA AGGCAAAGAT CTAAGCATGA TTGTGTTGCT GCCAAATGAA
 17 ATCGATGGTC TCCAGAAG CT TGAAGAGAAA CTCACTGCTG AGAAATTGAT
 18 GGAATGGACA AGTTTGCAGA ATATGAGAGA GACATGTGTC GATTTACACT
 19 TACCTCGGTT CAAAATGGAA GAGAGCTATG ACCTCAAGGA CACGTTGAGA
 20 ACCATGGGAA TGGTGAATAT CTTCAATGGG GATGCAGACC TCTCAGGCAT
 21 GACCTGGAGC CACGGTCTCT CAGTATCTAA AGTCCTACAC AAGGCCTTTG
 22 TGGAGGTCAC TGAGGAGGGA GTGGAAGCTG CAGCTGCCAC CGCTGTAGTA
 23 GTAGTCGAAT TATCATCTCC TTCAACTAAT GAAGAGTTCT GTTGTAATCA
 24 CCCTTTCCTA TTCTTCATAA GGCAAAATAA GACCAACAGC ATCCTCTTCT
 25 ATGGCAGATT CTCATCCCCA, and deposited at ECACC under deposition number ECACC
 26 01031315.

- 1 18. (Withdrawn) A protein expression system for production of SCCA1/SCCA2 fusion protein.
- 1 19. (Withdrawn) A recombinant bacteria comprising a plasmid according to claim 13.
- 1 20. (Withdrawn) A recombinant bacteria comprising a plasmid according to claim 14.
- 1 21. (Withdrawn) A recombinant E. coli comprising a plasmid according to claim 13.
- 1 22. (Withdrawn) A recombinant E. coli comprising a plasmid according to claim 14.
- 1 23. (Withdrawn) A method for detecting the gene rearrangement forming the SCCA1/SCCA2
 2 fusion protein using a cDNA cloning and sequencing analysis of tumor DNA.
- 1 24. (Withdrawn) A method for detecting the gene rearrangement forming the SCCA2/SCCA1
 2 fusion protein using a cDNA cloning and sequencing analysis of tumor DNA.
- 1 25. (Withdrawn) A method for detecting the gene rearrangement forming the SCCA1/SCCA2
 2 fusion protein using a Southern blot-technology applied on tumor DNA.

- 1 26. (Withdrawn) A method for detecting the gene rearrangement forming the SCCA2/SCCA1
2 fusion protein using a Southern blot-technology applied on tumor DNA.
- 1 27. (Withdrawn) A method for detecting the gene rearrangement forming the SCCA1/SCCA2
2 fusion protein using a PCR-analysis technology.
- 1 28. (Withdrawn) A method for detecting the gene rearrangement forming the SCCA2/SCCA1
2 fusion protein using a PCR-analysis technology.
- 1 29. (Withdrawn) A method for detecting the gene rearrangement forming the SCCA1/SCCA2
2 fusion protein using an amino acid sequencing technology.
- 1 30. (Withdrawn) A method for detecting the gene rearrangement forming the SCCA2/SCCA1
2 fusion protein using an amino acid sequencing technology.
- 1 31. (Previously Presented) A method for detection the SCCA1/A2 fusion protein using Western
2 blotting.
- 1 32. (Withdrawn) A method for detection the SCCA2/AI fusion protein using Western blotting.
- 1 33. (Withdrawn) A monoclonal antibody specific for SCCAI/SCCA2 fusion protein.
- 1 34. (Withdrawn) A monoclonal antibody specific for SCCA2/SCCAZ fusion protein.
- 1 35. (Withdrawn) A polyclonal antibody reactive with SCCAI/SCCA2 fusion protein.
- 1 36. (Withdrawn) A monoclonal antibody specific for SCCA2/SCCA1 fusion protein.
- 1 37. (Previously Presented) An immunoassay using a monoclonal antibody or polyclonal
2 antibody specific for SCCA1/SCCA2 fusion protein for detecting the presence and concentration
3 of SCCA1/SCCA2 fusion protein.

1 38. (Withdrawn) An immunoassay using a monoclonal antibody or polyclonal antibody specific
2 for SCCA2/SCCA1 fusion protein for detecting the presence and concentration of
3 SCCA2/SCCA1 fusion protein.

1 39. (Previously Presented) A method for diagnosing the presence or absence of a squamous cell
2 carcinoma by detecting the SCCA1/SCCA2 fusion protein in a human sample.

1 40. (Withdrawn) A method for diagnosing the presence or absence of a squamous cell
2 carcinoma by detecting the SCCA2/SCCA1 fusion protein in a human sample.

1 41. (Previously Presented) A method according to claim 39, wherein the fusion protein is used
2 in a histochemical analysis.

1 42. (Withdrawn) A kit comprising a SCCA1/SCCA2 fusion protein antibody to be used in the
2 determination of the presence or absence of squamous cell carcinoma (SCC).

1 43. (Withdrawn) A kit comprising a SCCA2/SCCA1 fusion protein antibody to be used in the
2 determination of the presence or absence of squamous cell carcinoma (SCC).

1 44. (Withdrawn) A kit according to claim 42, in that it further comprises antibodies related to
2 SCCA1 and/or SCCA2.

1 45. (Previously Presented) A method according to claim 39, wherein the SCCA1/SCCA2
2 fusion protein is coded by the exons 2-7 of the SCCA1 gene fused to exon 8 of the SCCA2
3 gene.

1 46. (Currently Amended) A method according to claim 45, wherein the protein sequence of the
2 SCCA1/SCCA2 fusion protein is:

3 MNSLSEANTK FMFDLFQQFR KSKENNIFYS PISITSALGM VLLGAKDNTA
4 QQIKKVLHFD QVTENTTGKA ATYHVDRSGN VHHQFQKLLTE FNKSTDAYE

5 LKIANKLFGE KTYLFLQEYL DAIKKFYQTS VESVDFANAP EESRKKINSW
 6 VESQTNEKIK NLIPEGNIGS NTTLLVLVNAI YFKGQWEKKF NKEDTKEEKF
 7 WPNKNTYKSI QMMRQYTSFH FASLEDVQAK VLEIPYKGKD LSMIVLLPNE
 8 IDGLQKLEEK LTAEKLMEW T SLQNMRETCV DLHLPRFKME ESYDLKDTLR
 9 TMGMVNIFNG DADLSGMTWS HGLSVSKVLH KAFVEVTEEG VEAAAATAVV
 10 VVELSSPSTN EEFCCNHPFL FFIRQNKTNS ILFYGRFSSP (SEQ ID NO: 1).

1 47. (Previously Presented) An immunoassay according to claim 37, wherein the
 2 SCCA1/SCCA2 fusion protein is coded by the exons 2-7 of the SCCA1 gene fused to exon 8
 3 of the SCCA2 gene.

1 48. (Currently Amended) An immunoassay according to claim 37, wherein the protein
 2 sequence of the SCCA1/SCCA2 fusion protein is:

3 MNSLSEANTK FMFDLFQQFR KSKENNIFYS PISITSALGM VLLGAKDNTA
 4 QQIKKVLHFD QVTENTTGKA ATYHVDRSGN VHHQFQKLLTE FNKSTDAYE
 5 LKIANKLFGE KTYLFLQEYL DAIKKFYQTS VESVDFANAP EESRKKINSW
 6 VESQTNEKIK NLIPEGNIGS NTTLLVLVNAI YFKGQWEKKF NKEDTKEEKF
 7 WPNKNTYKSI QMMRQYTSFH FASLEDVQAK VLEIPYKGKD LSMIVLLPNE
 8 IDGLQKLEEK LTAEKLMEW T SLQNMRETCV DLHLPRFKME ESYDLKDTLR
 9 TMGMVNIFNG DADLSGMTWS HGLSVSKVLH KAFVEVTEEG VEAAAATAVV
 10 VVELSSPSTN EEFCCNHPFL FFIRQNKTNS ILFYGRFSSP (SEQ ID NO: 1).

1 49. (Previously Presented) A method according to claim 31, wherein the SCCA1/SCCA2
 2 fusion protein is coded by the exons 2-7 of the SCCA1 gene fused to exon 8 of the SCCA2
 3 gene.

1 50. (Currently Amended) A method according to claim 31, wherein the protein sequence of the
 2 SCCA1/SCCA2 fusion protein is:

3 MNSLSEANTK FMFDLFQQFR KSKENNIFYS PISITSALGM VLLGAKDNTA
 4 QQIKKVLHFD QVTENTTGKA ATYHVDRSGN VHHQFQKLLTE FNKSTDAYE

5 LKIANKLFGE KTYLFLQEYL DAIKKFYQTS VESVDFANAP EESRKKINSW
6 VESQTNEKIK NLIPEGNIGS NTTLVLVNAI YFKGQWEKKF NKEDTKEEKF
7 WPNKNTYKSI QMMRQYTSFH FASLEDVQAK VLEIPYKGKD LSMIVLLPNE
8 IDGLQKLEEK LTAEKLEMEWT SLQNMRETCV DLHLPRFKME ESYDLKDTLR
9 TMGMVNIENG DADLSGMTWS HGLSVSKVLH KAFVEVTEEG VEAAAATAVV
10 VVELSSPSTN EEFCCNHPFL FFIRQNKTNS ILFYGRFSSP (SEQ IN NO: 1).